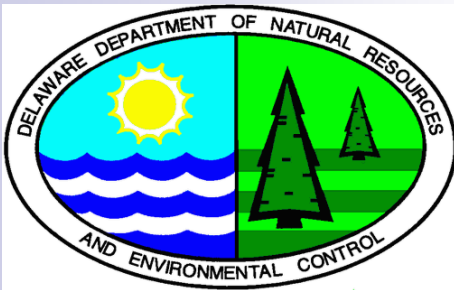


7 DE Admin Code 1138
Section 10

***New
Plating and Polishing
Standard***



Public Workshop
June 9, 2009

Blue Skies Delaware; Clean Air for Life

Information to be Covered

- Health impacts of “plating and polishing metal HAPs”
- Affected operations vs. Exempted operations
- Requirements for each type of affected operation
 - Emission control options / Management practices
 - Demonstrating compliance - Initial & Ongoing
 - Notification, Reporting & Recordkeeping
 - Compliance dates - “New” vs. “Existing”
 - Permitting requirements
- Compliance Assistance Tools Available
- Path forward



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Key terms

- Hazardous air pollutants or HAPs
- Plating and polishing metal HAPs
- Electrolytic plating
- Non-electrolytic plating
- Dry mechanical polishing
- Control system
 - Capture system
 - Control device
- Deviation
- New vs. existing sources



Health Impacts

Plating and polishing metal hazardous air pollutants (HAPs)

- Cadmium and its compounds
- Chromium and its compounds
- Lead compounds
- Manganese and its compounds
- Nickel and its compounds



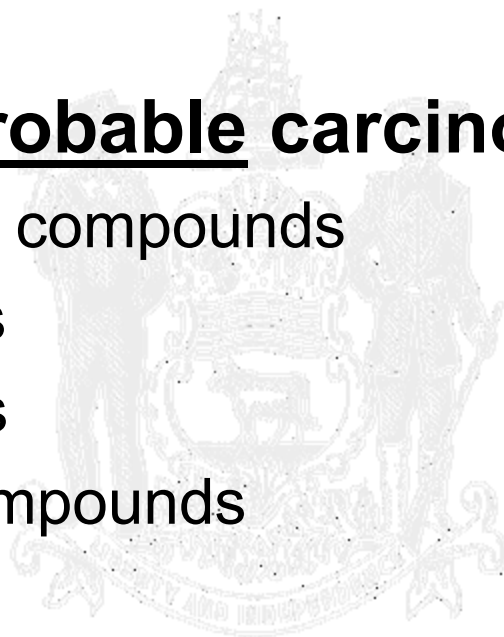
Carcinogenic Effects

EPA classified known carcinogen (Group A)

- Cr+6 compounds

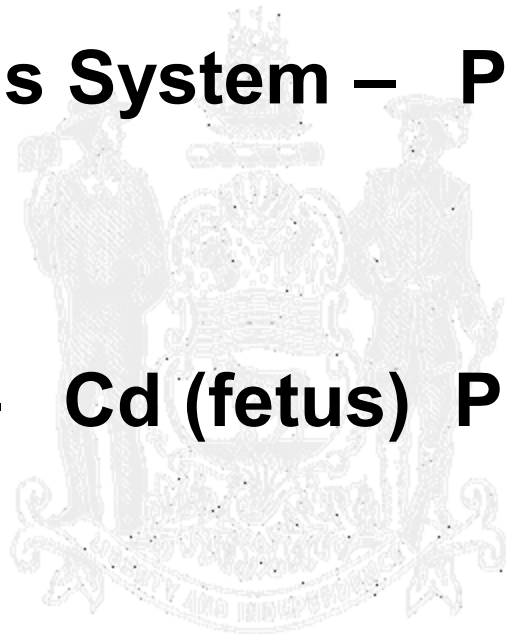
EPA classified probable carcinogen (Group B1/B2)

- Cadmium and its compounds
- Cr+3 compounds
- Lead compounds
- Nickel and its compounds



Chronic Non-carcinogenic Effects

- Renal System – Cd
- Respiratory System – Cd Cr+3 Mn Ni
- Central Nervous System – Pb Mn
- Blood – Pb
- Skin – Ni
- Development – Cd (fetus) Pb (fetus & children)



Detailed Health Effects Information

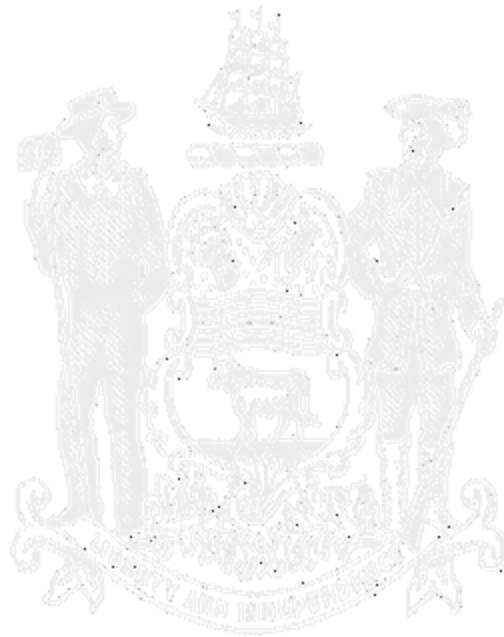
- <http://www.epa.gov/ttn/atw/hlthef/cadmium.html>
- <http://www.epa.gov/ttn/atw/hlthef/chromium.html>
- <http://www.epa.gov/ttn/atw/hlthef/lead.html>
- <http://www.epa.gov/ttn/atw/hlthef/manganes.html>
- <http://www.epa.gov/ttn/atw/hlthef/nickel.html>



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Metal Coating Operations

- Affected
- Exempted



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Affected Operations

- **Electrolytic plating operations**
 - Non-cyanide electroplating
 - Cyanide electroplating
 - Flash or short-term electroplating
- **Non-electrolytic plating operations**
 - Electroless plating
 - Other metal coating operations
 - Chromate conversion or MnPO_4 coatings
 - $\text{Ni}(\text{C}_2\text{H}_3\text{O}_2)_2$ or $\text{Na}_2(\text{Cr}_2\text{O}_7)$ sealing
 - Thermal spraying operations
- **Dry mechanical polishing operations**

But

only if a “Plating and
Polishing Metal HAP”
is involved in the
operation

!!!!!!



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Exempted Operations

- **Non-area** sources (e.g. major HAP sources) – 10/25 tpy
- Process tanks subject to **Chrome Plating MACT** (Section 6)
- **R&D** process tanks
- Thermal spraying to **repair surfaces**
- Dry mechanical polishing to **restore original finish**
- Tank bath contains **NO** “Plating and Polishing Metal HAP”
 - **<0.1weight %** of Cd, Cr, Pb or Ni
 - **<1.0 weight %** of Mn



Affected Operations

- **Electrolytic plating operations**
 - **Non-cyanide electroplating**
 - Cyanide electroplating
 - Flash or short-term electroplating
- **Non-electrolytic plating operations**
 - Electroless plating
 - **Other metal coating operations**
 - Chromate conversion or MnPO_4 coatings
 - $\text{Ni}(\text{C}_2\text{H}_3\text{O}_2)_2$ or $\text{Na}_2(\text{Cr}_2\text{O}_7)$ sealing
 - Thermal spraying operations
- **Dry mechanical polishing operations**



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Requirements for Affected Operations

- **Control Technology Requirements**
- **Management Practices**
- **Compliance Demonstration**
- **Other Miscellaneous Requirements**



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Non-cyanide electroplating

Emission Control Options (1 of the following)

- Add wetting agent / fume suppressant to tank bath
- Install control system on process tank
- Install cover on process tank

Plus

- Implement applicable management practices (MPs)



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Non-cyanide electroplating

If adding wetting agent / fume suppressant

Emission control requirements

- Add WA/FS according to MFR's specifications upon startup
- Maintain same WA/FS ratio to other bath ingredients, when replenishing tank bath
- No additional WA/FS needed, if WA/FS incorporated with other bath ingredients



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Non-cyanide electroplating

If using control system on process tank

Emission control requirements

- Operate the control system according to MFR's specifications and operating instruction
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators
- Develop and implement a written Startup, Shutdown and Malfunction (SSM) plan



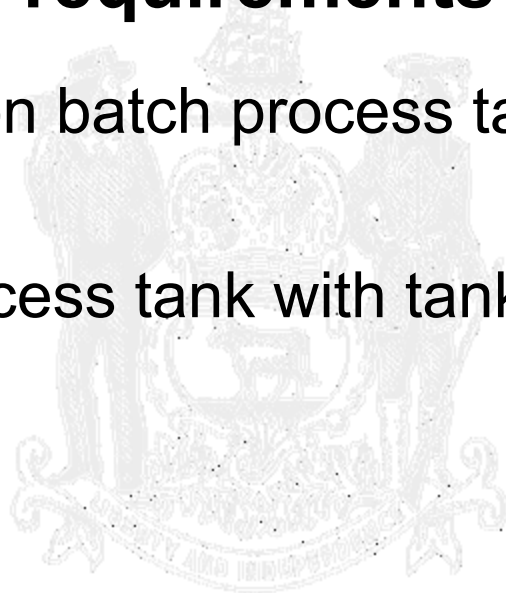
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Non-cyanide electroplating

If using cover on batch process tank

Emission control requirements

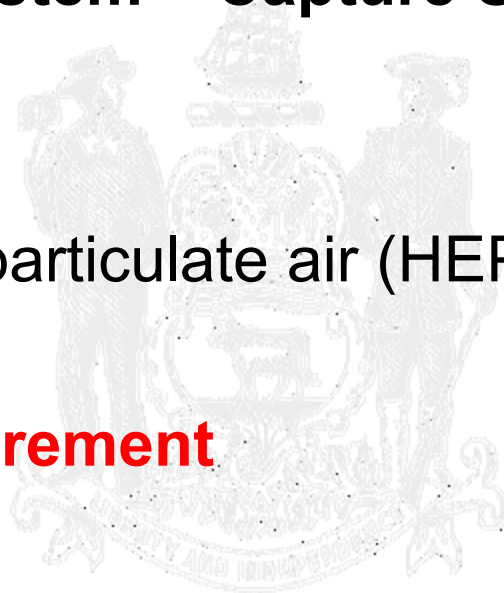
- Install tank cover on batch process tank
- Operate batch process tank with tank cover in place $\geq 95\%$ of operating time



Dry Mechanical Polishing

Emission Control Options

- **Install Control System – Capture System/Control Device**
 - Cartridge filter
 - Fabric filter
 - High efficiency particulate air (HEPA) filter
- **But No MPs requirement**



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Dry Mechanical Polishing

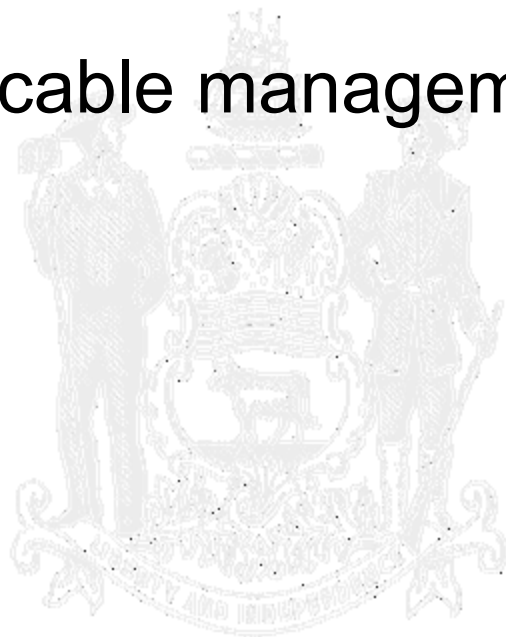
Emission control requirements

- Operate the control system according to MFR's specifications and operating instruction
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators
- Develop and implement a written Startup, Shutdown and Malfunction (SSM) plan



Non-electrolytic metal coatings

- No emission control requirements
- Implement applicable management practices (MPs)



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Requirements for Affected Operations

- Control Technology Requirements
- **Management Practices**
- Compliance Demonstration
- Other Miscellaneous Requirements



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Non-cyanide electroplating and non-electrolytic metal coatings

Management practices (MPs) requirements

- Determine the applicable MPs in 10.4.7
- Implement applicable MPs, as practicable

Note: Dry mechanical polishing operations are exempt from the management practices



Management practices requirements

- Minimize tank bath agitation when removing any parts
- Maximize the draining of parts upon removal
- Optimize the design of barrels, racks, and parts to minimize drag out
- Use tank covers, if already owned and available
- Minimize or reduce heating of tank baths
- Perform regular repair, maintenance, and preventive maintenance
- Minimize tank bath contamination

All management practices contain the proviso “as practicable”



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Management practices requirements

- Maintain quality control of chemicals used in tank baths
- Maintain quality control of chemical and other bath ingredient concentrations in the process tanks
- Perform general good housekeeping through regular sweeping or vacuuming and periodic wash downs
- Minimize spills and overflows
- Perform regular inspections to identify leaks and opportunities for pollution prevention
- Use a squeegee system in continuous or reel-to-reel process tanks

All management practices contain the proviso “as practicable”



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Requirements for Affected Operations

- Control Technology Requirements
- Management Practices
- **Compliance Demonstration**
- Other Miscellaneous Requirements



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Initial Notification of Applicability

Due **11/11/09**, if existing source (<7/1/08)

Due the later of **11/11/09** or start up, if new source (\geq 7/1/08)



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Initial Notification of Applicability

- Name & address of the owner or operator (O/O)
- Address of the affected source
- Statement that affected source is subject to Section 10 of 7 DE Admin Code 1138
- A brief description of the affected source
- Description of the compliance method



Initial Compliance Demonstration using the Notification of compliance status

Due 7/1/10, if existing source (<7/1/08)

Due the later of **11/11/09** or start up, if new source (\geq 7/1/08)



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Initial Compliance Demonstration

Electroplating using wetting agent/fume suppressant

- Initially add WA/FS per MFR's specifications
- State “such” in the notification of compliance status

PLUS

- Implement applicable MPs, as practicable
- State “such” in the notification of compliance status



Initial Compliance Demonstration

Electroplating using a control system

- Install control system designed to collect emissions and to transport the emissions to approved control device
- Follow the MFR's specifications and operating instructions at all time
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators



Initial Compliance Demonstration

Electroplating using a control system - **Continued**

- State in the notification of compliance status that a control system has been installed and operated according to the MFR's specifications and operating instructions

PLUS

- Implement applicable MPs, as practicable
- State “**such**” in the notification of compliance status



Initial Compliance Demonstration

Electroplating using cover on batch process tank

- Install tank cover on **batch** process tank
- State in the notification of compliance status that batch process tank is operated with the tank cover in place $\geq 95\%$ of operating time

PLUS

- Implement applicable MPs, as practicable
- State “**such**” in the notification of compliance status



Initial Compliance Demonstration

Dry mechanical polishing using a control system

- Install control system designed to collect emissions and to transport the emissions to approved control device
- Follow the MFR's specifications and operating instructions at all time
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators



Initial Compliance Demonstration

Dry mechanical polishing - **Continued**

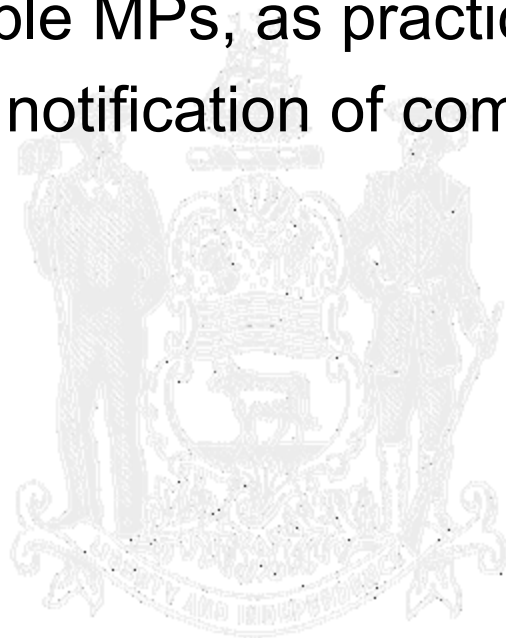
- State in the notification of compliance status that a control system has been installed and operated according to the MFR's specifications and operating instructions



Initial Compliance Demonstration

Non-electrolytic metal coatings

- Implement applicable MPs, as practicable
- State “such” in the notification of compliance status



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Ongoing Compliance Demonstration using the Annual compliance certification report (ACCR)

Complete the **ACCR** no later than 1/31 for previous year

Keep all **ACCR** in an readily accessible location



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Ongoing Compliance Demonstration

Electroplating using wetting agent/fume suppressant

- Record that WA/FS was initially added per MFR's specifications
- Add and record that WA/FS was added in same ratio as initially made up, when replenishing the tank bath
- State “such” in the annual compliance certification report

PLUS

- Continue to implement applicable MPs, as practicable
- State “such” in the annual compliance certification report



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Ongoing Compliance Demonstration

Electroplating using a control system

- Operate and maintain the control system according to the MFR's specifications and operating instructions
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators
- Take immediate corrective action to return the control system to proper operation, following any malfunction
- Record the results of
 - All control system inspections
 - Any deviation from normal operation
 - Any corrective actions taken



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Ongoing Compliance Demonstration

Electroplating using a control system - **Continued**

- State in the annual compliance certification report that the control system has been operated and maintained according to the MFR's specifications and operating instructions

PLUS

- Continue to implement applicable MPs, as practicable
- State “**such**” in the annual compliance certification report



Ongoing Compliance Demonstration

Electroplating using cover on batch process tank

- Operate **batch** process tank with tank cover in place $\geq 95\%$ of operating time
- Record operating times and times that tank cover is in place on a daily basis
- State in the annual compliance certification report that the batch process tank have been operated with the tank cover in place $\geq 95\%$ of operating time

PLUS

- Continue to implement applicable MPs, as practicable
- State “**such**” in the annual compliance certification report



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Ongoing Compliance Demonstration

Dry mechanical polishing using a control system

- Operate and maintain the control system according to the MFR's specifications and operating instructions
- Keep the MFR's specifications and operating instructions in a location easily accessible by the operators
- Take immediate corrective action to return the control system to proper operation, following any malfunction
- Record the results of
 - All control system inspections
 - Any deviation from normal operation
 - Any corrective actions taken



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Ongoing Compliance Demonstration

Dry mechanical polishing - **Continued**

- State in the annual compliance certification report that the control system has been operated and maintained according to the MFR's specifications and operating instructions



Ongoing Compliance Demonstration

Non-electrolytic metal coatings

- Continue to implement applicable MPs, as practicable
- State “**such**” in the annual compliance certification report



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Annual Deviation Report (ADR)

Complete the **ADR** no later than 1/31 for previous year
Submit the **ACCR** and **ADR** no later than 1/31 for previous year



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Annual Deviation Report

- If any deviation from the applicable requirements of Section 10 occurred during the reporting year, the owner or operator shall prepare a “deviation report” that identifies
 - The deviations that occurred
 - The corrective actions taken



Requirements for Affected Operations

- Control Technology Requirements
- Management Practices
- Compliance Demonstration
- **Other Miscellaneous Requirements**



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Other Miscellaneous Requirements

Monitoring Requirements
Recordkeeping Requirements
Compliance Dates
Air Permitting Requirements



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Monitoring requirements

If using a control system

- Install, maintain and operate a differential pressure drop monitoring device across each control device
- Observe and record the differential pressure drop at least once per day
- Take immediate corrective action, if the observed differential pressure drop is outside the normal operating range specified by the MFR



Recordkeeping requirements

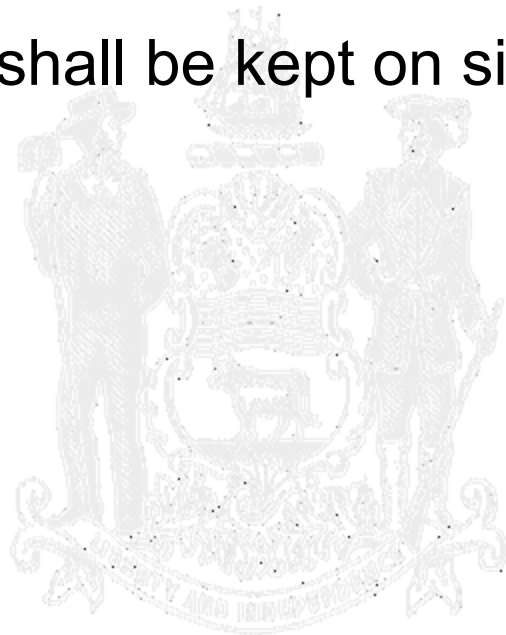
- Copies of and supporting documentation for
 - Initial notification
 - Notification of compliance status
 - Annual compliance certification reports
 - Annual deviation reports
- Records of the occurrence, duration, and cause of each deviation
- Records required to demonstrate continuous compliance with applicable standards and management practices



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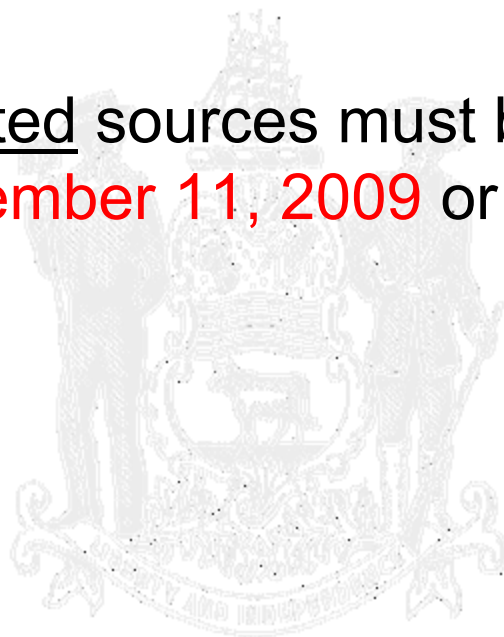
Recordkeeping requirements

- Records must be kept in a form suitable for expeditious inspection for at least 5 years
- The latest 2 years shall be kept on site of the source



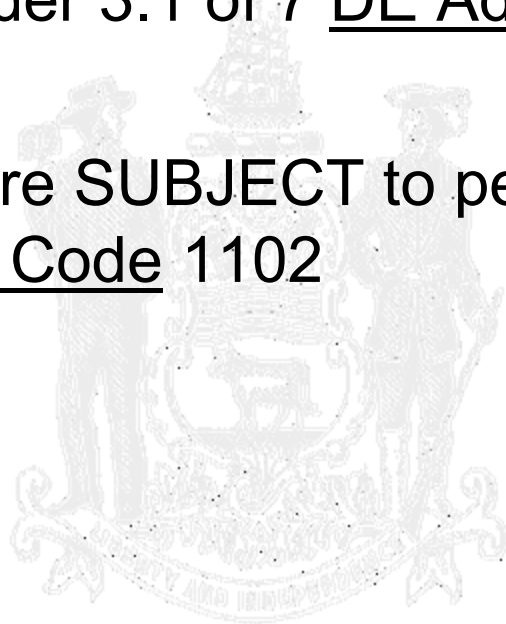
Compliance Dates

- Existing affected sources must be in compliance no later than July 1, 2010
- New or reconstructed sources must be in compliance not later than **November 11, 2009** or upon startup, whichever is later



Air Permitting Requirements

- Affected sources are exempt from Title V permitting requirements, IF the O/O is not otherwise required to obtain a Title V permit under 3.1 of 7 DE Admin Code 1130
- Affected sources are SUBJECT to permitting requirements under 7 DE Admin Code 1102



Compliance Assistance Tools

- **Initial notification**
- **Notification of compliance status**
- **Annual compliance certification report**
- **Annual deviation report**

<http://www.awm.delaware.gov/Info/Regs/Pages/PandP.aspx>



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Path Forward

- Publish proposed rule in Delaware Register of Regulation – Aug. 1
- Public hearing – New Castle – Aug. 26
- Publish final rule in Delaware Register of Regulation – Nov 1
- Rule effective date – Nov. 11



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